FORE

SYSTEMS®

UNIX Adapters

Release Notes

Software Version 4.1

MANU0091-02
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Legal Notices

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1.0 General Description of Software Release

These release notes highlight the features that have been added to or have changed in the *ForeThought* software version 4.1 release.

2.0 System Requirements

- To ensure proper operation of UNIX adapters in networks with switches running Fore-Thought 4.1, UNIX adapters currently running with ForeThought 2.x or earlier should be upgraded to run ForeThought 4.1.
- When using LAN emulation, the ForeThought 4.1 adapter software requires that Fore-Thought 4.1 software also be running on the switch, SunOS or Solaris workstation in your network that is providing the LAN Emulation Services.

3.0 Improvements

- Support for UNI 3.1 signalling
- Improved ILMI provides address registration for multiple physical adapters
- Enhanced firmware on all 200E series adapters
- Support for large MTU sizes on LANE

3.1 Performance Enhancements

3.1.1 IRIX

- Added support for AppleTalk protocol over LANE.

3.1.2 SunOS/Solaris

- Added support for LANE Services on Solaris systems
- Added support for AppleTalk protocol over LANE

4.0 Known Issues or Concerns

4.1 All Platforms

1. ForeThought 4.1 is the final release that supports the `asxmon`, `topology`, `cchan`, `cpath` and `cport` administrative programs. Equivalent configuration can be accomplished through the *ForeRunner* switch ATM Mangement Interface (AMI).

2. When running *ForeThought* 4.0.2 LECs with *ForeThought* 4.1 LANE services, the *ForeThought* 4.1 LES MTU size for the ELAN that the *ForeThought* 4.0.2 LEC joins must be set to `1516` to ensure proper data transfer.

3. FORE Systems' ATM API should be run with load balancing off.

4.2   IRIX

1. IRIX will install *only* the 32-bit (032 ABI) `libatm.a` on all supported IRIX platforms. This is a change from the previous release where a 32-bit `libatm.a` was installed on 32-bit machines and 64-bit `libatm.a` was installed on 64-bit machines. Applications will need to compile as 32-bit objects and link with the 32-bit `libatm.a`. This was done in order to make it easier to build and maintain applications.

2. While using load balancing with multiple adapters, network connections may be lost if the interface through which the route exists for the network is configured down (e.g. via the command `ifconfig fa0 down`). In such cases, manually deleting the existing route (e.g., `route delete` *<net> <gateway>*) from the table and manually adding a route via another interface (e.g `route add` *<net> <gateway>*) will restore connectivity.

3. Heavy UDP/IP stress - testing with lots of IP fragmentation may make IRIX systems unstable (panic, losing yp services, consoles freezing, etc). This is especially true on low memory machines (e.g 64 MB). Patch 1418 (or later version of the patch) from SGI is required and will help in stabilizing the problem. Please contact FORE Technical Support if you think you have this problem.

4.3   SunOS/Solaris

1. *ForeRunner PCA-200EUX ATM PCI Bus Adapter Installation Manual* (MANU0205-01, dated April, 1997); **paragraph 4.2.2 *Software Installation***; and *ForeRunner PCA-200EUX ATM PCI Bus Adapter for UltraSPARC User's Manual* (MANU0204-01, dated April, 1997) **paragraph 3.2.2 *Software Installation*** should read as follows:

    The PCA-200EUX device drivers for the Solaris operating system, ATM API library, installation and administration programs, and on-line manual pages, are contained on the software distribution CD-ROM.

    1. Load the CD-ROM into the system's CD-ROM drive. If the volume manager daemon, `vold`, is running the CD-ROM's file system auto-mounts on a directory (e.g., `/cdrom`). Proceed to Step 4. If `vold` is not running, continue with step 2.

    2. Create a read-only directory on which the CD-ROM file system will be mounted (e.g., /cdrom).

    3. Insert the CD-ROM into the system's CD-ROM drive and execute the following command:

            `mount -F hsfs -r` *dev_filename directory_name*`<ENTER>`

    where *device_filename* is the name of your CD-ROM (e.g., `/dev/dsk/c0t6d0s0`), and *directory_name* is the name of the directory you created in step 2. Consult the Solaris documentation if your CD-ROM drive is addressed differently from the example.

    3a. Create a directory: e.g, `/usr/fore` and copy the appropriate tar file for the Solaris PCI driver (e.g., `sunos5_pca_4.1.0.tar`) from the CD-ROM into it.

    3b. Make the directory created in step 3a current and then enter the following command:

            `tar xvf` *file_name* `<ENTER>`

    where *file_name* is the name of the Solaris PCI driver file that you copied in step 3a.

4. Begin the FORE ATM software installation process by entering the following command:

> **pkgadd -d** *directory_name*

where *directory_name* is the name of the directory created in step 3a. The following screen appears:

Continue the installation beginning with the NOTE following step 4 in the manual.

2. Sparc 1, 1+, SPARC Classic, and SPARC LX are not supported for this release.

3. (Solaris only) To support MTU sizes larger than the normal 9180, edit your **/etc/system** file by inserting an entry of the form:

> **set fore_atm:fore_classical_mtu =** *<value>*

where *<value>* is the desired MTU size (e.g., 65535). This matter is also explained in the **atmconfig** man page.

Do not set the MTU size for the classical IP interface to a value greater than or equal to 65527. The driver does not range-check for values greater than or equal to 65527

4. Do not start **rarpd** with the **-a** option. Instead, specify the interface on which to start. Interfaces created by FT 4.1 drivers do not support **rarpd** (Reverse Address Resolution Protocol). Generally, in SunOS and Solaris, this daemon is started with the **-a** (all) option. For example, when the daemon tries to start **rarp** on the fa0 interface, it binds an SAP, but fails to successfully start **rarp**. Subsequently, this SAP is not released and so cannot be reused and will result in an error when another program tries to use this SAP.

Generally, the scripts are written such that the presence of a **/tftpboot** directory triggers the **rarpd -a**. If the host does have one such directory, then during boot time you might see a **DL_BIND_REQ** failed message in the **syslog** or **/var/adm/message** file since **rarpd** was trying to bind all the ATM interfaces (fa0, qaa0, qaa1 and so on) to the same SAP. To avoid this, you need to modify the boot-time script files (usually **/etc/rc.local** on SunOS and **/etc/rc2.d/S15nfs.server** on Solaris) so as to start **rarpd** only on the ethernet interface (le0) or other interfaces where this protocol is supported.

5. The FORE API libraries are not multi-thread safe. Do not attempt to use them in multi-thread environments.

6. When running **atmdiag** on an SBA-200E, do not run the Slave Access Test (memory test)

7. (SunOS only) Performance for UDP over CLIP degrades if packet size exceeds 7k for MTU sizes larger than 7k.

4.4   AIX

1. In the *ForeRunner PCA-200EUX ATM PCI Bus Adapter Installation Manual* (MANU0205-01, dated April, 1997), make the following corrections:

    The paragraph following Figures 5-6 and 5-11 should read as follows:

    > At the system prompt, enter the *device/directory/filename* for the CD-ROM drive, directory, and filename of the FORE software that you are installing (e.g., **/cdrom/ibm/aix41/aix41_4.1.0**).

2. In the *ForeRunner MCA-200E ATM Micro Channel Bus Adapter for AIX User's Manual* (MANU0074-01, dated April, 1997); and in the *ForeRunner PCA-200EUX ATM PCI Bus Adapter for AIX User's Manual* (MANU0125-01, dated April, 1997), make the following corrections:

    The paragraph following Figures 3-6 and 3-11 should read as follows:

    > At the system prompt, enter the *device/directory/filename* for the CD-ROM drive, directory, and filename of the FORE software that you are installing (e.g., **/cdrom/ibm/aix41/aix41_4.1.0**).

3. RS/6000 Model 43P (type 7248) machines may hang upon reboot unless the following precautions are taken:

    a. The firmware must be at Revision 1.11 or greater. The latest firmware is available through IBM Support and may be installed by IBM Support Personnel or by following the Procedure in the *User's Guide* that was shipped with the computer.

    b. The machine must be rebooted using the **shutdown -r** command. Do not us the **reboot** command to reboot the machine.

4. Users of multi-processor machines that are running AIX 4.2 must obtain and apply APAR IX61675 from IBM support. This fix prevents a problem that may cause multi-processor machines to hang during operation.

5. The system error log may record errors of the type below. These errors do not indicate a problem with the adapter and should be disregarded.

    ```
    LABEL:          fore_atm_msg
    Resource Name: Fore ATM
    Description:    UNDETERMINED ERROR
    Detail Data:    transform_mbuf: out of tx dma mappings
    ```

6. When using Classical IP, clients may initially delay for up to 60 seconds before contacting the ARP Server.

7. The SMIT setting for changing the UNI version used (**Change / Show ATM Network UNI Configuration**) does not persist across reboots. If you use this feature, you should do the following:

Edit the file **/etc/rc.net**. Go to the end of the file. After the line that reads:

END: FORE ATM Interface configuration

add the following line:/

usr/etc/fore/atmconfig -u *VERSION UNI-DEVICE* **>>$LOGFILE 2>&1**

where:

VERSION is **30** for UNI 3.0 signalling, **31** for UNI 3.1 signalling, or **auto** for UNI auto-configuration.

> **NOTE**   **auto** is the default setting, so if you use UNI auto-configuration, there is no need to follow this procedure.

UNI-DEVICE is one of the **qa** devices (qa*X*0), where *X* is **a** for the first adapter, **b** for the second adapter, etc.

> **NOTE**   If you are configuring more than one adapter, use a separate **atmconfig** command for each adapter.

For example, to configure the first adapter in a system for UNI version 3.0, and the second adapter for UNI version 3.1, add the following two lines to the end of the **/etc/rc.net** file:

```
/usr/etc/fore/atmconfig -u 30 qaa0 >>$LOGFILE 2>&1
/usr/etc/fore/atmconfig -u 31 qab0 >>$LOGFILE 2>&1
```

5.0 Contacting Technical Support

In the U.S.A., you can contact FORE Systems' Technical Support by any one of four methods:

1. If you have access to the Internet, you may contact FORE Systems' Technical Support via e-mail at the following address:

   support@fore.com

2. You may FAX your questions to "support" at:

   412-933-3416

3. You may send questions, via U.S. Mail, to the following address:

   FORE Systems, Inc.
   1000 FORE Drive
   Warrendale, PA 15086

4. You may telephone your questions to "support" at:

   800-671-FORE or **412-635-3700**

Technical support for non-U.S.A. customers should be handled through your local distributor.

No matter which method is used for technical support, please be prepared to provide the serial number(s) of the product(s) and as much information as possible describing your problem or question.